

AMENDMENTS TO THE CLAIMS

For the Examiner's convenience, all pending claims are set forth in the following Listing of Claims, and have been amended where noted:

Listing of Claims:

Claims 1-57 (Canceled)

- 58) (Currently Amended) An apparatus to traverse a seabed topographic feature, comprising:
a subsea pipeline constructed to carry fluids ~~from a first location~~ across the topographic feature ~~[[to]]~~ between a first location and a second location; wherein:
the topographic feature is selected from the group consisting of subsea basins, domes, valleys, cliffs, canyons, escarpments and combinations thereof;
said pipeline comprising at least one distributed buoyancy region;
said pipeline comprising a first unbuoyed pipeline section extending from said first location on a sea floor to said distributed buoyancy region and a second unbuoyed pipeline section extending from said distributed buoyancy region to said second location on a sea floor; and
said distributed buoyancy region comprising two or more spatially arranged discrete buoyancy solutions directly attached to said distributed buoyancy region to create a positively buoyant inverse catenary section connecting said first and said second pipeline sections in fluid communication when said distributed buoyancy solutions are located below the waterline; and
a ~~[[first]]~~ flexure control device ~~at said first location~~ located between said first unbuoyed pipeline section and said distributed buoyancy region to reduce bending stress and strain in said first unbuoyed pipeline section.
- 59) (Currently Amended) The apparatus of claim 58 wherein ~~[[the]]~~ each discrete buoyancy solution comprises one or more buoyancy-providing modules disposed along a length of said pipeline.

- 60) (Currently Amended) The apparatus of claim 58 wherein ~~[[the]]~~ each discrete buoyancy solution comprises a ~~continuous~~ coating of buoyant material.
- 61) (Previously Presented) The apparatus of claim 58 further comprising a tether system to retain said pipeline in position and to resist forces of undersea currents.
- 62) (Previously Presented) The apparatus of claim 58 wherein said first and said second pipeline sections are negatively buoyant.
- 63) (Canceled)
- 64) (Currently Amended) The apparatus of claim 58 wherein said first flexure control device is located proximate to a ~~cliff~~ an edge of the topographic feature.
- 65) (Previously Presented) The apparatus of claim 58 wherein said first flexure control device is located distant to a ~~cliff~~ an edge of the topographic feature.

Claims 66-72 (Canceled)

- 73) (New) A pipeline for traversing a topographic feature, comprising:
a first unbuoyed section located subsea and extending from a first location on the seabed;
a second unbuoyed section located subsea and extending from a second location on the seabed; and
at least one positively buoyant inverse catenary section disposed between the first and second unbuoyed sections, wherein the positively buoyant inverse catenary section comprises two or more spatially arranged buoyancy solutions directly attached to an outer diameter thereof to provide a positively buoyant inverse catenary section when the buoyancy solutions are located below the waterline, wherein the first and second unbuoyed sections are in fluid communication with one another via the positively buoyant inverse catenary section, wherein the at least one positively buoyant inverse catenary section traverses the topographic

feature, and wherein the topographic feature is selected from the group consisting of subsea basins, domes, valleys, cliffs, canyons, escarpments, and combinations thereof.

- 74) (New) The pipeline of claim 73, wherein at least one buoyancy solution comprises one or more discrete buoyancy-providing modules.
- 75) (New) The pipeline of claim 74, wherein the buoyancy-providing module is a buoy.
- 76) (New) The pipeline of claim 74, wherein the buoyancy-providing module is a tethered buoy.
- 77) (New) The pipeline of claim 73, wherein at least one buoyancy solution is a buoyant coating.
- 78) (New) The pipeline of claim 73, wherein the first and second locations are located on opposing sides of the topographic feature on the seabed.
- 79) (New) The pipeline of claim 74, wherein the discrete buoyancy-providing module comprises a buoyant coating, buoy, or both.
- 80) (New) An apparatus to traverse a seabed topographic feature, comprising:
 - a subsea pipeline constructed to carry fluids across the topographic feature between a first location and a second location; wherein:
 - the topographic feature is selected from the group consisting of subsea basins, domes, valleys, cliffs, canyons, escarpments and combinations thereof;
 - said pipeline comprising at least one distributed buoyancy region;
 - said pipeline comprising a first unbuoyed pipeline section extending from said first location on a sea floor to said distributed buoyancy region and a second unbuoyed pipeline section extending from said distributed buoyancy region to said second location on a sea floor; and

said distributed buoyancy region comprising two or more spatially arranged discrete buoyancy solutions directly attached to said distributed buoyancy region to create a self-supporting, positively buoyant, inverse catenary section connecting said first and said second pipeline sections in fluid communication; and
a flexure control device located between said first unbuoyed pipeline section and said distributed buoyancy region to reduce bending stress and strain in said first unbuoyed pipeline section.

- 81) (New) The apparatus of claim 80 wherein at least one buoyancy solution comprises a buoyancy-providing module disposed along a length of said distributed buoyancy region.
- 82) (New) The apparatus of claim 81 wherein the buoyancy-providing module is a tethered buoy.
- 83) (New) The apparatus of claim 80 wherein the buoyancy solutions comprise a coating of buoyant material.
- 84) (New) The apparatus of claim 80 further comprising a flexure control device located between said second unbuoyed pipeline section and said distributed buoyancy region to reduce bending stress and strain in said second unbuoyed pipeline section.
- 85) (New) The apparatus of claim 80 wherein said first and said second pipeline sections are negatively buoyant.